



1005384, 402501

SEQUENCE LISTING

<110> Emil M. Orozco, Jr.
Zude Weng
Wesley B. Bruce
Rebecca E. Cahoon
Yong Tao

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 Gln Gly Ile Val Pro Phe Val Phe Ala Lys Glu Tyr Gly Val His Pro
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Ile Gly Val Ile Trp Ser Leu Val Cys Phe Arg Trp Asn Phe Gln Met
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Pro Ala Ile Val Leu Gln Ser Ile Ser Ile Leu Ser Asp Ala Gly Leu
      65              70              75              80

Gly Met Ala Met Phe Ser Leu Gly Leu Phe Met Ala Leu Gln Pro Arg
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Ile Ile Ala Cys Gly Asn Lys Val Ala Thr Phe Ala Met Ala Val Arg
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Phe Leu Thr Gly Pro Ala Val Met Ala Ala Ala Ser Phe Ala Val Gly
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Leu Arg Gly Thr Leu Leu His Val Ala Ile Val Gln Ala Ala Leu Pro
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 35 40 45

Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Thr Asn Asn Pro
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Tyr Thr Met Asn Leu Arg Phe Ile Ala Ala Asp Thr Leu Gln Lys Leu
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Met Val Leu Ala Met Leu Thr Ala Trp Ser His Leu Ser Arg Arg Gly
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Ser Leu Glu Trp Thr Ile Thr Leu Phe Ser Leu Ser Thr Leu Pro Asn
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Thr Leu Val Met Gly Ile Pro Leu Leu Lys Gly Met Tyr Gly Asp Phe
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Ser Gly Ser Leu Met Val Gln Ile Val Val Leu Gln Cys Ile Ile Trp
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Val Asp Pro Asp Val Val Ser Leu Asp Gly Arg Arg Asp Ala Ile Glu
 180 185 190

Thr Glu Ala Glu Val Lys Glu Asp Gly Arg Ile His Val Thr Val Arg
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Arg Ser Asn Ala Ser Arg Ser Asp Ile Tyr Ser Arg Arg Ser Met Gly
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Phe Ser Ser Thr Thr Pro Arg Pro Ser Asn Leu Thr Asn Ala Glu Ile
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Tyr Ser Leu Gln Ser Ser Arg Asn Pro Thr Pro Arg Gly Ser Ser Phe
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Ala Ala Asp Ala Phe Gly Ile Arg Thr Gly Ala Thr Pro Arg Pro Ser
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Asn Tyr Glu Asp Asp Ala Ser Lys Pro Lys Tyr Pro Leu Pro Val Val
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Asn Ala Thr Ser Gly Ala Gly Ala Ala His Tyr Pro Ala Pro Asn Pro
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Ala Val Ala Ala Ala Pro Lys Gly Ala Arg Lys Ala Ala Thr Asn Gly
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Xaa Xaa Thr Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala Leu
35 40 45

Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Thr Asn Asp Pro
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 Phe Ala Met Asn Leu Arg Phe Leu Ala Val Asp Thr Leu Gln Lys Val
 65 70 75 80
 Ala Val Leu Ala Leu Leu Ala Leu Xaa Ser Xaa Ala Ala Ser Ser Xaa
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Thr Leu

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Ile Phe Thr Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala Leu
      35             40             45

Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Thr Asn Asp Pro
      50             55             60

Phe Ala Met Asn Leu Arg Phe Leu Ala Ala Asp Thr Leu Gln Lys Val
      65             70             75             80

Ala Val Leu Ala Leu Leu Ala Leu Ala Ser Arg Gly Leu Ser Ser Pro
          85             90             95

Arg Ala Leu Gly Leu Asp Trp Ser Ile Thr Leu Phe Ser Leu Ser Thr
      100             105             110

Leu Pro Asn Thr Leu Val Met Gly Ile Pro Leu Leu Arg Gly Met Tyr
      115             120             125

Gly Ala Ser Ser Ala Gly Thr Leu Met Val Gln Val Val Val Leu Gln
      130             135             140

Cys Ile Ile Trp Tyr Thr Leu Met Leu Phe Leu Phe Glu Tyr Arg Ala
      145             150             155             160

Ala Arg Ala Leu Val Leu Asp Gln Phe Pro Asp Gly Ala Ala Ala Ser
          165             170             175

Ile Val Ser Phe Arg Val Asp Ser Asp Val Val Ser Leu Ala Arg Gly
      180             185             190

Asp Val Glu Leu Glu Ala Glu Pro Asp Gly Val Ala Gly Ala Gly Ala
      195             200             205

Val Ser Ser Arg Gly Gly Asp Ala Gly Arg Val Arg Val Thr Val Arg
      210             215             220

Lys Ser Thr Ser Ser Arg Ser Glu Ala Ala Cys Ser His Ser His Ser
      225             230             235             240

Gln Thr Met Gln Pro Arg Val Ser Asn Leu Ser Gly Val Glu Ile Tyr
          245             250             255

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Ser Leu Gln Ser Ser Arg Asn Pro Thr Pro Arg Gly Ser Ser Phe Asn
 260 265 270
 His Ala Asp Phe Phe Asn Ile Val Gly Ala Ala Ala Lys Gly Gly Gly
 275 280 285
 Gly Ala Ala Gly Asp Glu Glu Lys Gly Ala Cys Gly Gly Gly Gly Gly
 290 295 300
 Gly His Ser Pro Gln Pro Gln Ala Val Ala Val Pro Ala Lys Arg Lys
 305 310 315 320
 Asp Leu His Met Leu Val Trp Ser Ser Ser Ala Ser Pro Val Ser Glu
 325 330 335
 Arg Ala Ala Val His Val Phe Gly Ala Gly Gly Ala Asp His Ala Asp
 340 345 350
 Val Leu Ala Lys Gly Ala Gln Ala Tyr Asp Glu Tyr Gly Arg Asp Asp
 355 360 365
 Tyr Ser Ser Arg Thr Lys Asn Gly Ser Gly Gly Ala Asp Lys Gly Gly
 370 375 380
 Pro Thr Leu Ser Lys Leu Gly Ser Asn Ser Thr Ala Gln Leu Tyr Pro
 385 390 395 400
 Lys Asp Asp Gly Glu Gly Arg Ala Ala Ala Val Ala Met Pro Pro Ala
 405 410 415
 Ser Val Met Thr Arg Leu Ile Leu Ile Met Val Trp Arg Lys Leu Ile
 420 425 430
 Arg Asn Pro Asn Thr Tyr Ser Ser Leu Ile Gly Val Val Trp Ser Leu
 435 440 445
 Val Ser Tyr Arg Trp Gly Ile Glu Met Pro Ala Ile Ile Ala Arg Ser
 450 455 460
 Ile Ser Ile Leu Ser Asp Ala Gly Leu Gly Met Ala Met Phe Ser Leu
 465 470 475 480
 Gly Leu Phe Met Ala Leu Gln Pro Arg Ile Ile Ala Cys Gly Asn Lys
 485 490 495
 Leu Ala Ala Ile Ala Met Gly Val Arg Phe Val Ala Gly Pro Ala Val
 500 505 510
 Met Ala Ala Ala Ser Ile Ala Val Gly Leu Arg Gly Val Leu Leu His
 515 520 525
 Ile Ala Ile Val Gln Ala Ala Leu Pro Gln Gly Ile Val Pro Phe Val
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tgtacgccag cgttctcggc gtctgtgtgg cgtgcatcgc gtacaggtgg cacctgagct 180
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tcaatcgatt nttcttcgtt ttncaaagga gtatggctta ttncgatgac tcagnacggc 480
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<213> Oryza sativa

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Gly Val Val Trp Ala Cys Ile Ala Tyr Arg Trp His Leu Ser Leu Pro
20 25 30
Gly Ile Val Thr Gly Ser Leu Gln Val Met Ser Arg Thr Gly Thr Gly
35 40 45
Met Ser Met Phe Ser Met Gly Leu Phe Met Gly Gln Gln Glu Arg Val
50 55 60
Ile Ala Cys Gly Ala Gly Leu Thr Ala Leu Gly Met Ala Leu Arg Phe
65 70 75 80

Val Ala Gly Pro Leu Ala Thr Leu Val Gly Ala Ala Ala Leu Gly Leu
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Arg Gly Asp Val Leu His Leu Ala Ile Ile Gln Xaa Xaa Leu
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 <211> 330
 <212> DNA
 <213> Oryza sativa

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 acacggtgat ggcggcggtg gtgccgctgt acgtggcgat gttcctggcg tacgggtcgg 180
 tgcggtggtg gggcatcttc acgccggacc agtgctccgg catcaaccgc ttcgtcgcca 240
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 <211> 74
 <212> PRT
 <213> Oryza sativa

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 1 5 10 15

Leu Tyr Val Ala Met Phe Leu Ala Tyr Gly Ser Val Arg Trp Trp Gly
 20 25 30

Ile Phe Thr Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala Ile
 35 40 45

Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Thr Asn Asp Pro
 50 55 60

Tyr Ala Met Asn Leu Arg Phe Leu Ala Ala
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<210> 19
 <211> 2162
 <212> DNA
 <213> Oryza sativa

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 acacggtgat ggcggcggtg gtgccgctgt acgtggcgat gttcctggcg tacgggtcgg 180
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 agggcgccca cgcggagacg gaggccgagg tggcgggcga cgggcgggctg caggtcaccg 720
 tgcgcgggtc ctcggtgtcg cggcggtcgc tgctggtcac gccgcggccg tcgaacctga 780
 cgggagcgga gatctactcg cttagctcgt cgcggaaccc aaccccgcgg ggctccaact 840

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gcgacatttg tacaagagat aacgacagaa tgtactcaaa tataaccgat attagatatg 2100
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aa
2162

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<210> 20

<211> 589

<212> PRT

<213> *Oryza sativa*

<400> 20

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Leu Tyr Val Ala Met Phe Leu Ala Tyr Gly Ser Val Arg Trp Trp Gly
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Ile Phe Thr Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala Ile
      35              40              45

Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Thr Asn Asp Pro
      50              55              60

Tyr Ala Met Asn Leu Arg Phe Leu Ala Ala Asp Thr Leu Gln Lys Leu
      65              70              75              80

Leu Val Leu Ala Gly Leu Ala Ala Trp Ser Arg Leu Pro Ser Arg Thr
      85              90              95

Gly Ala Pro Arg Leu Asp Trp Ser Ile Thr Leu Phe Ser Leu Ser Thr
      100              105              110

Leu Pro Asn Thr Leu Val Met Gly Ile Pro Leu Leu Ile Ala Met Tyr
      115              120              125

Gly Pro Tyr Ser Gly Ser Leu Met Val Gln Ile Val Val Leu Gln Cys
      130              135              140

Ile Ile Trp Tyr Thr Leu Met Leu Phe Leu Phe Glu Phe Arg Ala Ala
      145              150              155              160

Arg Met Leu Ile Ala Asp Gln Phe Pro Asp Thr Ala Ala Ser Ile Val

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165					170					175					
Ser	Leu	His	Val	Asp	Pro	Asp	Val	Val	Ser	Leu	Glu	Gly	Gly	His	Ala
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Glu	Thr	Glu	Ala	Glu	Val	Ala	Ala	Asp	Gly	Arg	Leu	His	Val	Thr	Val
		195					200					205			
Arg	Arg	Ser	Ser	Val	Ser	Arg	Arg	Ser	Leu	Leu	Val	Thr	Pro	Arg	Pro
	210					215					220				
Ser	Asn	Leu	Thr	Gly	Ala	Glu	Ile	Tyr	Ser	Leu	Ser	Ser	Ser	Arg	Asn
225						230					235				240
Pro	Thr	Pro	Arg	Gly	Ser	Asn	Phe	Asn	His	Ala	Asp	Phe	Phe	Ala	Met
				245					250					255	
Val	Gly	Gly	Gly	Pro	Pro	Pro	Pro	Thr	Pro	Ala	Ala	Val	Arg	Gly	Ser
			260					265					270		
Ser	Phe	Gly	Ala	Ser	Glu	Leu	Tyr	Ser	Leu	Gln	Ser	Ser	Arg	Gly	Pro
		275					280						285		
Thr	Pro	Arg	Gln	Ser	Asn	Phe	Asp	Glu	His	Ser	Ala	Arg	Pro	Pro	Lys
	290					295					300				
Pro	Pro	Ala	Thr	Thr	Thr	Gly	Ala	Leu	Asn	His	Asp	Ala	Lys	Glu	Leu
305						310					315				320
His	Met	Phe	Val	Trp	Ser	Ser	Ser	Ala	Ser	Pro	Val	Ser	Glu	Val	Ser
				325					330					335	
Gly	Leu	Pro	Val	Phe	Ser	Gly	Gly	Gly	Gly	Gly	Gly	Ala	Leu	Asp	Val
			340					345					350		
Gly	Ala	Lys	Glu	Ile	His	Met	Val	Ile	Pro	Ala	Asp	Leu	Pro	Gln	Asn
		355					360					365			
Asn	Gly	Ser	Gly	Lys	Glu	His	Glu	Glu	Tyr	Gly	Ala	Val	Ala	Leu	Gly
	370					375					380				
Gly	Gly	Gly	Gly	Gly	Glu	Asn	Phe	Ser	Phe	Gly	Gly	Gly	Lys	Thr	Val
385						390					395				400
Asp	Gly	Ala	Glu	Ala	Val	Asp	Glu	Glu	Ala	Ala	Leu	Pro	Asp	Gly	Leu
				405					410					415	
Thr	Lys	Met	Gly	Ser	Ser	Ser	Thr	Ala	Glu	Leu	His	Pro	Lys	Val	Val
			420					425					430		
Asp	Val	Asp	Gly	Pro	Asn	Ala	Gly	Gly	Gly	Ala	Ala	Gly	Ala	Gly	Gln
		435					440					445			
Tyr	Gln	Met	Pro	Pro	Ala	Ser	Val	Met	Thr	Arg	Leu	Ile	Leu	Ile	Met
		450				455					460				
Val	Trp	Arg	Lys	Leu	Ile	Arg	Asn	Pro	Asn	Thr	Tyr	Ser	Ser	Leu	Leu
465						470					475				480
Gly	Leu	Ala	Trp	Ser	Leu	Val	Ala	Phe	Arg	Leu	Phe	Met	Ala	Leu	Gln
				485					490					495	

Val Asp Ser Asp Val Met Ser Leu Asp Gly Arg Gln His Pro Leu Glu
 20 25 30
 Thr Asp Ala Gln Ile Lys Glu Asp Gly Lys Leu His Val Thr Val Arg
 35 40 45
 Lys Ser Asn Ala Ser Arg Ser Asp Ile Phe Ser Arg Arg Ser Gln Gly
 50 55 60
 Phe Ser Ser Thr Thr Pro Arg Pro Ser Asn Leu Thr Asn Ala Glu Ile
 65 70 75 80
 Tyr Ser Leu Gln Ser Ser Arg Asn Pro Thr Pro Arg Gly Ser Ser Phe
 85 90 95
 Asn His Thr Asp Phe Tyr Ser Met Met Ala Ala Gly Arg Asn Ser Asn
 100 105 110
 Phe Gly Ala Asn Asp Val Tyr Gly Leu Ser Ala Ser Arg Gly Pro Thr
 115 120 125
 Pro Arg Pro Ser Asn Tyr Asp Glu Asp Ala Ser Asn Asn Asn Asn Gly
 130 135 140
 Lys Pro Arg Tyr His Tyr Pro Ala Ala Gly Thr Gly Thr Gly Thr Gly
 145 150 155 160
 Thr Gly Thr Gly Thr Gly Thr Gly His Tyr Pro Ala Pro Asn Pro Gly
 165 170 175
 Met Phe Ser Pro Thr Ala Ser Lys Asn Val Ala Lys Lys Pro Asp Asp
 180 185 190
 Pro Asn Lys Asp Leu His Met Phe Val Trp Ser Ser Ser Ala Ser Pro
 195 200 205
 Val Ser Asp Val Phe Gly Gly Gly His Glu Tyr Asp His Lys Glu Leu
 210 215 220
 Lys Leu Thr Val Ser Pro Gly Lys Val Glu Gly Asn Ile Asn Arg Asp
 225 230 235 240
 Thr Gln Glu Glu Tyr Gln Pro Glu Lys Asp Glu Phe Ser Phe Gly Asn
 245 250 255
 Arg Gly Ile Glu Asp Glu His Glu Gly Glu Lys Val Gly Asn Gly Asn
 260 265 270
 Pro Lys Thr Met Pro Pro Ala Ser Val Met Thr Arg Leu Ile Leu Ile
 275 280 285
 Met Val Trp Arg Lys Leu Ile Arg Asn Pro Asn Thr Tyr Ser Ser Leu
 290 295 300
 Ile Gly Leu Thr Trp Ser Leu Ile Ser Phe Arg Trp Asn Val Lys Met
 305 310 315 320
 Pro Ala Ile Ile Ala Lys Ser Ile Ser Ile Leu Ser Asp Ala Gly Leu
 325 330 335

Gly	Met	Ala	Met	Phe	Ser	Leu	Gly	Leu	Phe	Met	Ala	Leu	Gln	Pro	Arg	
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Ile	Ile	Ala	Cys	Gly	Asn	Ser	Thr	Ala	Ala	Phe	Ser	Met	Ala	Val	Arg	
355						360						365				
Phe	Leu	Thr	Gly	Pro	Ala	Val	Met	Ala	Ala	Ala	Ser	Ile	Ala	Val	Gly	
370						375						380				
Leu	Lys	Gly	Val	Leu	Leu	His	Val	Ala	Ile	Val	Gln	Ala	Ala	Leu	Pro	
385						390						395			400	
Gln	Gly	Ile	Val	Pro	Phe	Val	Phe	Ala	Lys	Glu	Tyr	Asn	Val	His	Pro	
			405						410						415	
Asp	Ile	Leu	Ser	Thr	Gly	Val	Ile	Phe	Gly	Met	Leu	Ile	Ala	Leu	Pro	
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435						440										

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aaaaaggaaa	gaagaacaaa	aatgataac	gtggaaagac	ctatacacgg	tcctgaccgc	300	
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ttctctcacc	ggaccagtcg	tccggcataa	accgcttcgt	ggcgactctc	gccgtgccgc	420	
tcctctcctt	ccacttcatc	tccaccaaca	acccttacgc	catgaacttc	cgcttcatcc	480	
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<212> PRT
<213> Glycine max
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<223> Xaa = ANY AMINO ACID
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<222> (78)
<223> Xaa = ANY AMINO ACID
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 Xaa Ile Phe Ser Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala
 35 40 45
 Ile Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Thr Asn Asn
 50 55 60
 Pro Tyr Ala Met Asn Phe Arg Phe Ile Arg Arg Arg Thr Xaa Thr Ser
 65 70 75 80
 Lys Lys Ile Ile Met Leu Phe Ala Leu Ala
 85 90

<210> 25
 <211> 2101
 <212> DNA
 <213> Glycine max

<400> 25
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 aaccaaattt ttccaattag cactagtagt acagtacaaa aaactagaag agcaaccaa 180
 attttccaat tgaaaaagaa ataacaacga gaacaaaatc ttatcgtgag atcgaataac 240
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 a 2101

<210> 26
 <211> 540
 <212> PRT

<213> Glycine max

<400> 26

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Ile Phe Ser Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala Ile
35 40 45
Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Thr Asn Asn Pro
50 55 60
Tyr Ala Met Asn Phe Arg Phe Ile Ala Ala Asp Thr Leu Gln Lys Ile
65 70 75 80
Ile Met Leu Phe Ala Leu Ala Ile Trp Thr Asn Leu Thr Lys Thr Gly
85 90 95
Ser Leu Glu Trp Met Ile Thr Ile Phe Ser Leu Ser Thr Leu Pro Asn
100 105 110
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Val Asp Ser Asp Val Val Ser Leu Asp Gly Arg Asp Phe Leu Glu Thr
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Asp Ala Glu Val Gly Asp Asp Gly Lys Leu His Val Thr Val Arg Lys
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225 230 235 240
Pro Arg Gly Ser Asn Phe Asn His Ala Asp Phe Phe Ser Met Met Gly
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Tyr Gln Pro Arg His Ser Asn Phe Thr Ala Asn Asp Leu Phe Ser Ser
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Arg Gly Pro Thr Pro Arg Pro Ser Asn Phe Glu Glu Pro Ser Met Pro
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Gln Ala Val Thr Val Ala Ser Pro Arg Phe Gly Phe Tyr Pro Ser Gln
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 Glu Ala Ser Ala Gly Lys His Met Pro Pro Ala Asn Val Met Thr Arg
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 Tyr Ser Ser Leu Ile Gly Val Val Trp Ser Leu Val Ala Phe Arg Trp
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 His Val His Met Pro Lys Ile Ile Glu Lys Ser Ile Ser Ile Leu Ser
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<211> 525

<212> DNA

<213> Glycine max

<400> 27

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 <211> 605
 <212> PRT
 <213> Glycine max

<400> 30

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			20					25					30		
Ile	Phe	Ser	Pro	Asp	Gln	Cys	Ser	Gly	Ile	Asn	Arg	Phe	Val	Ala	Leu
		35					40					45			
Phe	Ala	Val	Pro	Leu	Leu	Ser	Phe	His	Phe	Ile	Ala	Ser	Asn	Asn	Pro
	50					55					60				
Tyr	Glu	Met	Asn	Leu	Arg	Phe	Leu	Ala	Ala	Asp	Thr	Leu	Gln	Lys	Ile
65					70					75					80
Ile	Ile	Leu	Val	Leu	Leu	Ala	Val	Trp	Ser	Asn	Ile	Thr	Lys	Arg	Gly
			85					90						95	
Cys	Leu	Glu	Trp	Ala	Ile	Thr	Leu	Phe	Ser	Leu	Ser	Thr	Leu	Pro	Asn
			100					105					110		
Thr	Leu	Val	Met	Gly	Ile	Pro	Leu	Leu	Lys	Gly	Met	Tyr	Gly	Asp	Phe
		115					120					125			
Ser	Gly	Ser	Leu	Met	Val	Gln	Ile	Val	Val	Leu	Gln	Cys	Ile	Ile	Trp
	130					135					140				
Tyr	Thr	Leu	Met	Leu	Phe	Leu	Phe	Glu	Phe	Arg	Gly	Ala	Arg	Met	Leu
145					150					155					160
Ile	Ser	Glu	Gln	Phe	Pro	Asp	Thr	Ala	Ala	Ser	Ile	Val	Ser	Ile	His
				165					170					175	
Val	Asp	Ser	Asp	Val	Met	Ser	Leu	Asp	Gly	Arg	Gln	Pro	Leu	Glu	Thr
			180					185					190		
Glu	Ala	Glu	Ile	Lys	Glu	Asp	Gly	Lys	Leu	His	Val	Thr	Val	Arg	Lys
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			340					345						350		
Arg	Asp	Leu	His	Met	Phe	Val	Trp	Ser	Ser	Ser	Ala	Ser	Pro	Val	Ser	
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Val	Lys	Leu	Asn	Val	Ser	Pro	Gly	Lys	Val	Glu	Asn	Asn	His	Arg	Asp	
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Thr	Gln	Glu	Asp	Tyr	Leu	Glu	Lys	Asp	Glu	Phe	Ser	Phe	Gly	Asn	Arg	
			405						410					415		
Glu	Met	Asp	Arg	Glu	Met	Asn	Gln	Leu	Glu	Gly	Glu	Lys	Val	Gly	Asp	
			420					425					430			
Gly	Lys	Pro	Lys	Thr	Met	Pro	Pro	Ala	Ser	Val	Met	Thr	Arg	Leu	Ile	
		435					440					445				
Leu	Ile	Met	Val	Trp	Arg	Lys	Leu	Ile	Arg	Asn	Pro	Asn	Thr	Tyr	Ser	
	450					455					460					
Ser	Leu	Ile	Gly	Leu	Thr	Trp	Ser	Leu	Val	Ser	Phe	Lys	Trp	Asn	Val	
465					470					475					480	
Glu	Met	Pro	Ala	Ile	Ile	Ala	Lys	Ser	Ile	Ser	Ile	Leu	Ser	Asp	Ala	
				485					490					495		
Gly	Leu	Gly	Met	Ala	Met	Phe	Ser	Leu	Gly	Leu	Phe	Met	Ala	Leu	Gln	
			500					505					510			
Pro	Arg	Val	Ile	Ala	Cys	Gly	Asn	Ser	Thr	Ala	Ala	Phe	Ala	Met	Ala	
		515					520					525				
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Lys Ile Phe Thr Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala
 35 40 45

Val Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Ser Asn Xaa
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Pro Tyr Ala Met Asn Tyr His Phe Ile Ala Ala Asp Cys Leu Gln Lys
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Val Val Ile Leu

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<211> 2324

<212> DNA

<213> Glycine max

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 <212> PRT
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			20					25					30		
Ile	Phe	Thr	Pro	Asp	Gln	Cys	Ser	Gly	Ile	Asn	Arg	Phe	Val	Ala	Val
		35					40					45			
Phe	Ala	Val	Pro	Leu	Leu	Ser	Phe	His	Phe	Ile	Ser	Ser	Asn	Asp	Pro
	50					55					60				
Tyr	Ala	Met	Asn	Tyr	His	Phe	Ile	Ala	Ala	Asp	Cys	Leu	Gln	Lys	Val
65					70					75					80
Val	Ile	Leu	Gly	Ala	Leu	Phe	Leu	Trp	Asn	Thr	Phe	Thr	Lys	His	Gly
				85					90					95	
Ser	Leu	Asp	Trp	Thr	Ile	Thr	Leu	Phe	Ser	Leu	Ser	Thr	Leu	Pro	Asn
		100						105					110		
Thr	Leu	Val	Met	Gly	Ile	Pro	Leu	Leu	Lys	Ala	Met	Tyr	Gly	Asp	Phe
	115						120					125			
Ser	Gly	Ser	Leu	Met	Val	Gln	Ile	Val	Val	Leu	Gln	Ser	Val	Ile	Trp
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Tyr	Thr	Leu	Met	Leu	Phe	Met	Phe	Glu	Tyr	Arg	Gly	Ala	Lys	Leu	Leu
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Ile	Thr	Glu	Gln	Phe	Pro	Glu	Thr	Ala	Gly	Ser	Ile	Thr	Ser	Phe	Arg
				165					170					175	
Val	Asp	Ser	Asp	Val	Val	Ser	Leu	Asn	Gly	Arg	Glu	Pro	Leu	Gln	Thr
			180					185					190		
Asp	Ala	Glu	Ile	Gly	Glu	Asp	Gly	Lys	Leu	His	Val	Val	Val	Lys	Arg
	195						200					205			
Ser	Ala	Ala	Ser	Ser	Met	Ile	Ser	Ser	Phe	Asn	Lys	Ser	His	Leu	Thr
	210					215					220				
Ser	Met	Thr	Pro	Arg	Ala	Ser	Asn	Leu	Thr	Gly	Val	Glu	Ile	Tyr	Ser
225					230					235					240
Val	Gln	Ser	Ser	Arg	Glu	Pro	Thr	Pro	Arg	Gly	Ser	Ser	Phe	Asn	Gln
				245					250					255	
Thr	Asp	Phe	Tyr	Ala	Met	Phe	Ala	Ser	Lys	Ala	Pro	Ser	Pro	Lys	His
			260					265					270		
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Tyr Ser Leu Gln Ser Ser Lys Gly Ala Thr Pro Arg Thr Ser Asn Phe
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 Glu Glu Glu Met Leu Lys Met His Lys Lys Arg Gly Gly Arg Ser Met
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 Ser Gly Glu Leu Phe Asn Gly Gly Leu Val Ser Ser Asn Tyr Pro Pro
 325 330 335
 Pro Asn Pro Met Phe Ser Gly Ser Thr Ser Ala Ala Gly Gly Pro Lys
 340 345 350
 Lys Lys Asp Ser Ser Gly Gly Gly Gly Ala Val Ala Pro Asn Lys Glu
 355 360 365
 Leu His Met Phe Val Trp Ser Ser Ser Ala Ser Pro Val Ser Glu Gly
 370 375 380
 Asn Leu Arg His Ala Val Asn Arg Ala Ala Ser Thr Asp Phe Gly Thr
 385 390 395 400
 Val Asp Pro Ser Lys Ala Val Pro His Glu Thr Val Ala Ser Lys Ala
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 Val His Glu Leu Ile Glu Asn Met Ser Pro Gly Arg Arg Gly Ser Gly
 420 425 430
 Glu Arg Glu Pro Glu Met Asp Glu Gly Ala Lys Ile Pro Ala Ser Gly
 435 440 445
 Ser Pro Tyr Thr Cys Gln Lys Lys Val Asp Met Glu Asp Gly Asn Ala
 450 455 460
 Asn Lys Asn Gln Gln Met Pro Pro Ala Ser Val Met Thr Arg Leu Ile
 465 470 475 480
 Leu Ile Met Val Trp Arg Lys Leu Ile Arg Asn Pro Asn Thr Tyr Ser
 485 490 495
 Ser Leu Leu Gly Leu Thr Trp Ser Leu Ile Ser Phe Arg Trp His Ile
 500 505 510
 Glu Met Pro Thr Ile Val Lys Gly Ser Ile Ser Ile Leu Ser Asp Ala
 515 520 525
 Gly Leu Gly Met Ala Met Phe Ser Leu Gly Leu Phe Met Ala Leu Gln
 530 535 540
 Pro Lys Ile Ile Ala Cys Gly Lys Ser Val Ala Ala Phe Ser Met Ala
 545 550 555 560
 Val Arg Phe Leu Thr Gly Pro Ala Val Ile Ala Ala Thr Ser Ile Gly
 565 570 575
 Ile Gly Leu Arg Gly Val Leu Leu His Val Ala Ile Val Gln Ala Ala
 580 585 590
 Leu Pro Gln Gly Ile Val Pro Phe Val Phe Ala Lys Glu Tyr Asn Leu
 595 600 605
 His Ala Asp Ile Leu Ser Thr Ala Val Ile Phe Gly Met Leu Ile Ala

610

615

620

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<223> n=a,c,g or t

<220>

A circular black ink stamp from the Intellectual Property Office (IPO). The text "O I P E" is curved along the top inner edge, and "J C 2 9" is curved along the top outer edge. The date "MAY 28 2002" is stamped in the center. The words "PATENT & TRADE MARK OFFICE" are curved along the bottom inner edge.

ncgatgatta	ccgggaagga	catctaccac	ntgctggngg	nggtggtgcc	gctgtacgtg	120
gncatgttca	tggcgtacgg	gtcggtgcg	tgggtgggca	tcttcacgcc	ggaccantgc	180
tcgggcatca	aacgcttcgt	ngccgtcttc	gcggtggcgc	tcctctcctt	ccacttcatc	240
tccaccaacg	aacctacgc	catggactaa	cgcttctgtg	gcgcgcgact	gctgcanaan	300
ntcgttatcc	tgcgcncct	cgccgtgtgg	ganaangtgc	tctcccncca	acggtgcccn	360
ggggganaga	aggcgcgcaa	ggctcctcnc	tgggctggga	caacanactc	ttctccttgg	420
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<210> 36
<211> 89
<212> PRT
<213> Triticum aestivum
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<220>  
<221> UNSURE  
<222> (10)  
<223> Xaa = ANY AMINO ACID
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<220>
<221> UNSURE
<222> (12)..(13)
<223> Xaa = ANY AMINO ACID
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<220>  
<221> UNSURE  
<222> (20)  
<223> Xaa = ANY AMINO ACID
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<220>  
<221> UNSURE  
<222> (38)  
<223> Xaa = ANY AMINO ACID
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<220>  
<221> UNSURE  
<222> (69)  
<223> Xaa = ANY AMINO ACID
```

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<220>
<221> UNSURE
<222> (78)..(79)..(80)
<223> Xaa = ANY AMINO ACID
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<220>  
<221> UNSURE  
<222> (85)  
<223> Xaa = ANY AMINO ACID
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<400> 36
Met Ile Thr Gly Lys Asp Ile Tyr His Xaa Leu Xaa Xaa Val Val Pro
1 5 10 15

Leu Tyr Val Xaa Met Phe Met Ala Tyr Gly Ser Val Arg Trp Trp Gly
20 25 30

Ile Phe Thr Pro Asp Xaa Cys Ser Gly Ile Lys Arg Phe Val Ala Val
35 40 45

Phe Ala Val Ala Leu Leu Ser Phe His Phe Ile Ser Thr Asn Glu Pro
50 55 60

Tyr Ala Met Asp Xaa Arg Phe Leu Gly Ala Asp Ser Leu Xaa Xaa Xaa
65 70 75 80

Val Ile Leu Ala Xaa Leu Ala Val Trp
85

<210> 37
<211> 2293
<212> DNA
<213> *Triticum aestivum*

<400> 37
ctggatcgat cccagcagc agagacgaga tcccacgagg aaccgttggg atctagctag 60
ctagctcgtc gcgatgatca ccgggaagga catctacgac gtgctggcgg cgggtggtgcc 120
gctgtacgtg gccatgttca tggcgtacgg gtcggtgagg tgggtgggca tcttcacgcc 180
ggaccagtgc tcgggcatca accgcttcgt cgcggtcttc gcggtgccgc tcctctcctt 240
ccacttcata tccaccaacg acccctacgc catggactac cgcttcctgg ccgccgactc 300
gctgcagaag ctgctcatcc tcgcccgcct cgcggtgtgg cacaacgtgc tctcccgcga 360
ccggtgccgc ggccggcagg aggcggcgga ggcctcgctg ctggactgga ccatcacgct 420
cttctccctg gcgacgctgc ccaacacgct ggtgatgggc atcccgtgc tgcgcgccat 480
gtacggcgac ttctcggggt cgctcatggt gcagatcgtg gtgctgcaga gcgtcatctg 540
gtacacgctc atgctcttcc tcttcgagta ccgcgccgcc aaggcgctca tctccgagca 600
gttcccgcgc gacgtcggcg ccagcatcgc ctcttccgc gtgcactccg acgtcgtctc 660
gctcaacggg cgcgaggcgc tgcacgccga cgcgagggtc ggccgcgacg gccgcgtcca 720
cgctcgtcat cgcgggtccg cgctcggggt caccacgggc ggccacggcg ccgggcgctc 780
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gtccgacttc tactccatgt tcaacgggag caagctggct agtcccaagg gccagcccc 960
cagtgcggga ggtggtggtg cgcgcgggga ggggtcgcag gagcaggtg ccaacaagtt 1020
caaggcgggc gaggcggtg cgccctaccc cgcgcccac cccgggatga tgatgccggc 1080
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cgtgtggagc tccagcgctg cgcctgtgtc ggaggccaac ctccgcaacg ccgtcaacca 1200
cgccgcgtcc accgacttcg ccgcgcgacc gccggcgga gccacgccac gagacggcg 1260
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cgcggtggag gtggagatcg aggacggcat gatgaagagc ccggcgacgg ggctgggcg 1380
caagttcccg gtgtcggggt cccctacgt ggccccgcgg aagaaggcg ccgacgtgcc 1440
tggtgtggag gaggcggcgc acccgatgcc gccggcgagc gtgatgacct ggctcactct 1500
catcatggtg tggcgcaagc tcatccgcaa ccccaacacc tactccagcc tcatcgccct 1560
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catatccatc ctgtctgatg cagggtagg gatggctatg ttcagcttag gtctcttcat 1680
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gaggttcttg actgggcccg cgggtatcgc cgcgacctca atcgccgtcg ggctccgggg 1800
agtgtccta catgttgcca ttgtccaggc agcacttcca caaggaattg ttccatttgt 1860
gttcgccaa gagtacaatt gccatcctca aatacttagc acagcggtta tttttggaat 1920
gctcgtggcg ctcccgatca cgatactcta ctacgttctc cttgggatat agattcataa 1980
tcttgaagaa ccaaggctgc aaatcttcgg gtaggagaa gtagaattct agagagaaaa 2040
tggaactga acatgcttgt gggctgtcct gaagacctga agatgcatga gaccaagcag 2100
aaggatagg agaactaagt aggaccctag acaggaattc aaaggacaga taaagatatc 2160
cttgggtcca tttttttaat tttttatatt atttttacta ctgttttaga tccaaagtaa 2220
aggctagggc tttgagtatg aagagttcaa ccgttaaatc gaaaaaaaaa aaaaaaaaaa 2280
aaaaaaaaa aaa 2293

<210> 38
<211> 632
<212> PRT
<213> *Triticum aestivum*

<400> 38
Met Ile Thr Gly Lys Asp Ile Tyr Asp Val Leu Ala Ala Val Val Pro
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Leu Tyr Val Ala Met Phe Met Ala Tyr Gly Ser Val Arg Trp Trp Gly
 20 25 30
 Ile Phe Thr Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala Val
 35 40 45
 Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Thr Asn Asp Pro
 50 55 60
 Tyr Ala Met Asp Tyr Arg Phe Leu Ala Ala Asp Ser Leu Gln Lys Leu
 65 70 75 80
 Val Ile Leu Ala Ala Leu Ala Val Trp His Asn Val Leu Ser Arg Tyr
 85 90 95
 Arg Cys Arg Gly Gly Thr Glu Ala Gly Glu Ala Ser Ser Leu Asp Trp
 100 105 110
 Thr Ile Thr Leu Phe Ser Leu Ala Thr Leu Pro Asn Thr Leu Val Met
 115 120 125
 Gly Ile Pro Leu Leu Arg Ala Met Tyr Gly Asp Phe Ser Gly Ser Leu
 130 135 140
 Met Val Gln Ile Val Val Leu Gln Ser Val Ile Trp Tyr Thr Leu Met
 145 150 155 160
 Leu Phe Leu Phe Glu Tyr Arg Gly Ala Lys Ala Leu Ile Ser Glu Gln
 165 170 175
 Phe Pro Pro Asp Val Gly Ala Ser Ile Ala Ser Phe Arg Val Asp Ser
 180 185 190
 Asp Val Val Ser Leu Asn Gly Arg Glu Ala Leu His Ala Asp Ala Glu
 195 200 205
 Val Gly Arg Asp Gly Arg Val His Val Val Ile Arg Arg Ser Ala Ser
 210 215 220
 Gly Ser Thr Thr Gly Gly His Gly Ala Gly Arg Ser Gly Ile Tyr Arg
 225 230 235 240
 Gly Ala Ser Asn Ala Met Thr Pro Arg Ala Ser Asn Leu Thr Gly Val
 245 250 255
 Glu Ile Tyr Ser Leu Gln Thr Ser Arg Glu Pro Thr Pro Arg Gln Ser
 260 265 270
 Ser Phe Asn Gln Ser Asp Phe Tyr Ser Met Phe Asn Gly Ser Lys Leu
 275 280 285
 Ala Ser Pro Lys Gly Gln Pro Pro Val Ala Gly Gly Gly Gly Ala Arg
 290 295 300
 Gly Gln Gly Leu Asp Glu Gln Val Ala Asn Lys Phe Lys Gly Gly Glu
 305 310 315 320
 Ala Ala Ala Pro Tyr Pro Ala Pro Asn Pro Gly Met Met Met Pro Ala
 325 330 335
 Pro Arg Lys Lys Glu Leu Gly Gly Ser Asn Ser Asn Ser Asp Lys Glu

340						345						350					
Leu	His	Met	Phe	Val	Trp	Ser	Ser	Ser	Ala	Ser	Pro	Val	Ser	Glu	Ala		
		355					360					365					
Asn	Leu	Arg	Asn	Ala	Val	Asn	His	Ala	Ala	Ser	Thr	Asp	Phe	Ala	Ala		
		370				375					380						
Ala	Pro	Pro	Ala	Ala	Ala	Thr	Pro	Arg	Asp	Gly	Ala	Thr	Pro	Arg	Gly		
385					390					395						400	
Val	Ser	Gly	Ser	Val	Thr	Pro	Val	Met	Lys	Lys	Asp	Ala	Ser	Ser	Gly		
				405					410					415			
Ala	Val	Glu	Val	Glu	Ile	Glu	Asp	Gly	Met	Met	Lys	Ser	Pro	Ala	Thr		
				420				425					430				
Gly	Leu	Gly	Ala	Lys	Phe	Pro	Val	Ser	Gly	Ser	Pro	Tyr	Val	Ala	Pro		
		435				440						445					
Arg	Lys	Lys	Gly	Ala	Asp	Val	Pro	Gly	Leu	Glu	Glu	Ala	Ala	His	Pro		
		450				455					460						
Met	Pro	Pro	Ala	Ser	Val	Met	Thr	Arg	Leu	Ile	Leu	Ile	Met	Val	Trp		
465					470					475						480	
Arg	Lys	Leu	Ile	Arg	Asn	Pro	Asn	Thr	Tyr	Ser	Ser	Leu	Ile	Gly	Leu		
				485					490					495			
Val	Trp	Ser	Leu	Val	Ser	Phe	Arg	Trp	Asn	Ile	Gln	Met	Pro	Thr	Ile		
				500				505					510				
Ile	Lys	Gly	Ser	Ile	Ser	Ile	Leu	Ser	Asp	Ala	Gly	Leu	Gly	Met	Ala		
		515					520					525					
Met	Phe	Ser	Leu	Gly	Leu	Phe	Met	Ala	Leu	Gln	Pro	Lys	Ile	Ile	Ser		
		530				535					540						
Cys	Gly	Lys	Ser	Val	Ala	Thr	Phe	Ala	Met	Ala	Val	Arg	Phe	Leu	Thr		
545					550					555						560	
Gly	Pro	Ala	Val	Ile	Ala	Ala	Thr	Ser	Ile	Ala	Val	Gly	Leu	Arg	Gly		
				565					570					575			
Val	Leu	Leu	His	Val	Ala	Ile	Val	Gln	Ala	Ala	Leu	Pro	Gln	Gly	Ile		
				580				585					590				
Val	Pro	Phe	Val	Phe	Ala	Lys	Glu	Tyr	Asn	Cys	His	Pro	Gln	Ile	Leu		
		595					600					605					
Ser	Thr	Ala	Val	Ile	Phe	Gly	Met	Leu	Val	Ala	Leu	Pro	Ile	Thr	Ile		
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Leu	Tyr	Tyr	Val	Leu	Leu	Gly	Ile										
625					630												

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<210> 39
<211> 447
<212> DNA
<213> Triticum aestivum
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Tyr Ala Met Asn Tyr His Phe Leu Ala Ala Asp Ser Leu Gln Lys Val
65 70 75 80

Val Ile Leu Ala Ala Leu Phe Leu Trp Gln Ala Phe Ser Arg Arg Gly
 85 90 95
 Ser Leu Glu Trp Met Ile Thr Leu Phe Ser Leu Ser Thr Leu Pro Asn
 100 105 110
 Thr Leu Val Met Gly Ile Pro Leu Leu Arg Ala Met Tyr Gly Asp Phe
 115 120 125
 Ser Gly Asn Leu Met Val Gln Ile Val Val Leu Gln Ser Ile Ile Trp
 130 135 140
 Tyr Thr Leu Met Leu Phe Leu Phe Glu Phe Arg Gly Ala Lys Leu Leu
 145 150 155 160
 Ile Ser Glu Gln Phe Pro Glu Thr Ala Gly Ser Ile Thr Ser Phe Arg
 165 170 175
 Val Asp Ser Asp Val Ile Ser Leu Asn Gly Arg Glu Pro Leu Gln Thr
 180 185 190
 Asp Ala Glu Ile Gly Asp Asp Gly Lys Leu His Val Val Val Arg Arg
 195 200 205
 Ser Ser Ala Ala Ser Ser Met Ile Ser Ser Phe Asn Lys Ser His Gly
 210 215 220
 Gly Gly Leu Asn Ser Ser Met Ile Thr Pro Arg Ala Ser Asn Leu Thr
 225 230 235 240
 Gly Val Glu Ile Tyr Ser Val Gln Ser Ser Arg Glu Pro Thr Pro Arg
 245 250 255
 Ala Ser Ser Phe Asn Gln Thr Asp Phe Tyr Ala Met Phe Asn Ala Ser
 260 265 270
 Lys Ala Pro Ser Pro Arg His Gly Tyr Thr Asn Ser Tyr Gly Gly Ala
 275 280 285
 Gly Ala Gly Pro Gly Gly Asp Val Tyr Ser Leu Gln Ser Ser Lys Gly
 290 295 300
 Val Thr Pro Arg Thr Ser Asn Phe Asp Glu Glu Val Met Lys Thr Ala
 305 310 315 320
 Lys Lys Ala Gly Arg Gly Gly Arg Ser Met Ser Gly Glu Leu Tyr Asn
 325 330 335
 Asn Asn Ser Val Pro Ser Tyr Pro Pro Pro Asn Pro Met Phe Thr Gly
 340 345 350
 Ser Thr Ser Gly Ala Ser Gly Val Lys Lys Lys Glu Ser Gly Gly Gly
 355 360 365
 Gly Ser Gly Gly Gly Val Gly Val Gly Gly Gln Asn Lys Glu Met Asn
 370 375 380
 Met Phe Val Trp Ser Ser Ser Ala Ser Pro Val Ser Glu Ala Asn Ala
 385 390 395 400

Lys Asn Ala Met Thr Arg Gly Ser Ser Thr Asp Val Ser Thr Asp Pro
 405 410 415
 Lys Val Ser Ile Pro Pro His Asp Asn Leu Ala Thr Lys Ala Met Gln
 420 425 430
 Asn Leu Ile Glu Asn Met Ser Pro Gly Arg Lys Gly His Val Glu Met
 435 440 445
 Asp Gln Asp Gly Asn Asn Gly Gly Lys Ser Pro Tyr Met Gly Lys Lys
 450 455 460
 Gly Ser Asp Val Glu Asp Gly Gly Pro Gly Pro Arg Lys Gln Gln Met
 465 470 475 480
 Pro Pro Ala Ser Val Met Thr Arg Leu Ile Leu Ile Met Val Trp Arg
 485 490 495
 Lys Leu Ile Arg Asn Pro Asn Thr Tyr Ser Ser Leu Phe Gly Leu Ala
 500 505 510
 Trp Ser Leu Val Ser Phe Lys Trp Asn Ile Lys Met Pro Thr Ile Met
 515 520 525
 Ser Gly Ser Ile Ser Ile Leu Ser Asp Ala Gly Leu Gly Met Ala Met
 530 535 540
 Phe Ser Leu Gly Leu Phe Met Ala Leu Gln Pro Lys Ile Ile Ala Cys
 545 550 555 560
 Gly Lys Ser Val Ala Gly Phe Ala Met Ala Val Arg Phe Leu Thr Gly
 565 570 575
 Pro Ala Val Ile Ala Ala Thr Ser Ile Ala Ile Gly Ile Arg Gly Asp
 580 585 590
 Leu Leu His Ile Ala Ile Val Gln Ala Ala Leu Pro Gln Gly Ile Val
 595 600 605
 Pro Phe Val Phe Ala Lys Glu Tyr Asn Val His Pro Asp Ile Leu Ser
 610 615 620
 Thr Ala Val Ile Phe Gly Met Leu Val Ala Leu Pro Val Thr Val Leu
 625 630 635 640
 Tyr Tyr Val Leu Leu Gly Leu
 645
 <210> 44
 <211> 622
 <212> PRT
 <213> Arabidopsis thaliana
 <400> 44
 Met Ile Thr Ala Ala Asp Phe Tyr His Val Met Thr Ala Met Val Pro
 1 5 10 15
 Leu Tyr Val Ala Met Ile Leu Ala Tyr Gly Ser Val Lys Trp Trp Lys
 20 25 30
 Ile Phe Thr Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala Leu

35

40

45

Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ala Ala Asn Asn Pro
 50 55 60
 Tyr Ala Met Asn Leu Arg Phe Leu Ala Ala Asp Ser Leu Gln Lys Val
 65 70 75 80
 Ile Val Leu Ser Leu Leu Phe Leu Trp Cys Lys Leu Ser Arg Asn Gly
 85 90 95
 Ser Leu Asp Trp Thr Ile Thr Leu Phe Ser Leu Ser Thr Leu Pro Asn
 100 105 110
 Thr Leu Val Met Gly Ile Pro Leu Leu Lys Gly Met Tyr Gly Asn Phe
 115 120 125
 Ser Gly Asp Leu Met Val Gln Ile Val Val Leu Gln Cys Ile Ile Trp
 130 135 140
 Tyr Ile Leu Met Leu Phe Leu Phe Glu Tyr Arg Gly Ala Lys Leu Leu
 145 150 155 160
 Ile Ser Glu Gln Phe Pro Asp Thr Ala Gly Ser Ile Val Ser Ile His
 165 170 175
 Val Asp Ser Asp Ile Met Ser Leu Asp Gly Arg Gln Pro Leu Glu Thr
 180 185 190
 Glu Ala Glu Ile Lys Glu Asp Gly Lys Leu His Val Thr Val Arg Arg
 195 200 205
 Ser Asn Ala Ser Arg Ser Asp Ile Tyr Ser Arg Arg Ser Gln Gly Leu
 210 215 220
 Ser Ala Thr Pro Arg Pro Ser Asn Leu Thr Asn Ala Glu Ile Tyr Ser
 225 230 235 240
 Leu Gln Ser Ser Arg Asn Pro Thr Pro Arg Gly Ser Ser Phe Asn His
 245 250 255
 Thr Asp Phe Tyr Ser Met Met Ala Ser Gly Gly Gly Arg Asn Ser Asn
 260 265 270
 Phe Gly Pro Gly Glu Ala Val Phe Gly Ser Lys Gly Pro Thr Pro Arg
 275 280 285
 Pro Ser Asn Tyr Glu Glu Asp Gly Gly Pro Ala Lys Pro Thr Ala Ala
 290 295 300
 Gly Thr Ala Ala Gly Ala Gly Arg Phe His Tyr Gln Ser Gly Gly Ser
 305 310 315 320
 Gly Gly Gly Gly Gly Ala His Tyr Pro Ala Pro Asn Pro Gly Met Phe
 325 330 335
 Ser Pro Asn Thr Gly Gly Gly Gly Gly Thr Ala Ala Lys Gly Asn Ala
 340 345 350
 Pro Val Val Gly Gly Lys Arg Gln Asp Gly Asn Gly Arg Asp Leu His
 355 360 365

Met Phe Val Trp Ser Ser Ser Ala Ser Pro Val Ser Asp Val Phe Gly
370 375 380

Gly Gly Gly Gly Asn His His Ala Asp Tyr Ser Thr Ala Thr Asn Asp
385 390 395 400

His Gln Lys Asp Val Lys Ile Ser Val Pro Gln Gly Asn Ser Asn Asp
405 410 415

Asn Gln Tyr Val Glu Arg Glu Glu Phe Ser Phe Gly Asn Lys Asp Asp
420 425 430

Asp Ser Lys Val Leu Ala Thr Asp Gly Gly Asn Asn Ile Ser Asn Lys
435 440 445

Thr Thr Gln Ala Lys Val Met Pro Pro Thr Ser Val Met Thr Arg Leu
450 455 460

Ile Leu Ile Met Val Trp Arg Lys Leu Ile Arg Asn Pro Asn Ser Tyr
465 470 475 480

Ser Ser Leu Phe Gly Ile Thr Trp Ser Leu Ile Ser Phe Lys Trp Asn
485 490 495

Ile Glu Met Pro Ala Leu Ile Ala Lys Ser Ile Ser Ile Leu Ser Asp
500 505 510

Ala Gly Leu Gly Met Ala Met Phe Ser Leu Gly Leu Phe Met Ala Leu
515 520 525

Asn Pro Arg Ile Ile Ala Cys Gly Asn Arg Arg Ala Ala Phe Ala Ala
530 535 540

Ala Met Arg Phe Val Val Gly Pro Ala Val Met Leu Val Ala Ser Tyr
545 550 555 560

Ala Val Gly Leu Arg Gly Val Leu Leu His Val Ala Ile Ile Gln Ala
565 570 575

Ala Leu Pro Gln Gly Ile Val Pro Phe Val Phe Ala Lys Glu Tyr Asn
580 585 590

Val His Pro Asp Ile Leu Ser Thr Ala Val Ile Phe Gly Met Leu Ile
595 600 605

Ala Leu Pro Ile Thr Leu Leu Tyr Tyr Ile Leu Leu Gly Leu
610 615 620

<210> 45
<211> 425
<212> DNA
<213> Triticum aestivum

<400> 45
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caccagctcg cccgcagagt gagccgaggc cgagagccgg agcgcgagag gaagaagcag 120
aggaggctcg gcaagatgat cacgggcacg gacttctacc acgtgatgac ggcggtggtg 180
ccgctgtacg tggccatgat cctcgccctac ggctccgtca agtgggtggg catcttcacg 240
ccggaccagt gctccgggat caaccgcttc gtcgcgctct tcgccgtgcc gctcctctcc 300
ttccacttca tctccaccaa caaccctac accatgaacc tgcgcttcat cgccgcccgc 360

acgctgcaga agctcatgat gctcgccatg ctcaccgcct ggagccacct ctcccgccgc 420
ggcag 425

<210> 46
<211> 96
<212> PRT
<213> Triticum aestivum

<400> 46
Met Ile Thr Gly Thr Asp Phe Tyr His Val Met Thr Ala Val Val Pro
1 5 10 15
Leu Tyr Val Ala Met Ile Leu Ala Tyr Gly Ser Val Lys Trp Trp Gly
20 25 30
Ile Phe Thr Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala Leu
35 40 45
Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Thr Asn Asn Pro
50 55 60
Tyr Thr Met Asn Leu Arg Phe Ile Ala Ala Asp Thr Leu Gln Lys Leu
65 70 75 80
Met Met Leu Ala Met Leu Thr Ala Trp Ser His Leu Ser Arg Arg Gly
85 90 95

<210> 47
<211> 855
<212> DNA
<213> Zea mays

<400> 47
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atgggcatcc cgctgctcaa gggcatgtac ggcgacttct ccggcagcct catggtgcag 180
atcgtgggtgc tccagtgcac catctggtac acgctgatgc tgttcatgtt cgagtaccgc 240
ggcgccagga tcctcatcac cgagcagttc cccgacacgg cgggcgccat cgcctccatc 300
gtggtggacc ccgacgtggt gtcgctggac gggcgcaacg acgcatcga gacggaggcc 360
gaggtgaagg aggacggcaa gatacacgtc accgtgcggc gctccaacgc gtcgcgctcg 420
gacatctact cccggcggtc catggggttc tccagcacca cgcgcgggcc cagcaacctg 480
accaacgccg agatctactc gctgcagtcg tccaggaacc ccacgcgcgc gggctccagc 540
ttcaaccaca ccgacttcta ctccatggtc ggccgcagct ccaacttcgc cgcgggggac 600
gcgttcggcc tgcgcacggg cgccacgccc aggcggtcca actacgagga ggaccgcgag 660
ggcaaggcga acaagtacgg ccagtaccgc gcgcccacc cggccatggc ggcgcagccc 720
gccaagggcc tcaagaaggc ggccaatggg caggccaagg gcgaggacgg caaggaccta 780
cacatgttcg tgtggagctc cagcgcgtcg cccgtgtccg acgtgttcgg caatggcgcc 840
gccgagtaca acgac 855

<210> 48
<211> 285
<212> PRT
<213> Zea mays

<400> 48
Pro Arg Val Arg Leu Ile Val Leu Ala Leu Leu Thr Ala Trp Ser Tyr
1 5 10 15
Leu Ser Arg Arg Gly Cys Leu Glu Trp Thr Ile Thr Leu Phe Ser Leu
20 25 30

Ser	Thr	Leu	Pro	Asn	Thr	Leu	Val	Met	Gly	Ile	Pro	Leu	Leu	Lys	Gly
		35					40					45			
Met	Tyr	Gly	Asp	Phe	Ser	Gly	Ser	Leu	Met	Val	Gln	Ile	Val	Val	Leu
	50					55					60				
Gln	Cys	Ile	Ile	Trp	Tyr	Thr	Leu	Met	Leu	Phe	Met	Phe	Glu	Tyr	Arg
65					70					75					80
Gly	Ala	Arg	Ile	Leu	Ile	Thr	Glu	Gln	Phe	Pro	Asp	Thr	Ala	Gly	Ala
				85					90					95	
Ile	Ala	Ser	Ile	Val	Val	Asp	Pro	Asp	Val	Val	Ser	Leu	Asp	Gly	Arg
			100					105					110		
Asn	Asp	Ala	Ile	Glu	Thr	Glu	Ala	Glu	Val	Lys	Glu	Asp	Gly	Lys	Ile
		115					120					125			
His	Val	Thr	Val	Arg	Arg	Ser	Asn	Ala	Ser	Arg	Ser	Asp	Ile	Tyr	Ser
	130					135					140				
Arg	Arg	Ser	Met	Gly	Phe	Ser	Ser	Thr	Thr	Pro	Arg	Pro	Ser	Asn	Leu
145					150					155					160
Thr	Asn	Ala	Glu	Ile	Tyr	Ser	Leu	Gln	Ser	Ser	Arg	Asn	Pro	Thr	Pro
				165					170					175	
Arg	Gly	Ser	Ser	Phe	Asn	His	Thr	Asp	Phe	Tyr	Ser	Met	Val	Gly	Arg
			180					185					190		
Ser	Ser	Asn	Phe	Ala	Ala	Gly	Asp	Ala	Phe	Gly	Leu	Arg	Thr	Gly	Ala
		195					200					205			
Thr	Pro	Arg	Pro	Ser	Asn	Tyr	Glu	Glu	Asp	Pro	Gln	Gly	Lys	Ala	Asn
	210					215					220				
Lys	Tyr	Gly	Gln	Tyr	Pro	Ala	Pro	Asn	Pro	Ala	Met	Ala	Ala	Gln	Pro
225					230					235					240
Ala	Lys	Gly	Leu	Lys	Lys	Ala	Ala	Asn	Gly	Gln	Ala	Lys	Gly	Glu	Asp
				245					250					255	
Gly	Lys	Asp	Leu	His	Met	Phe	Val	Trp	Ser	Ser	Ser	Ala	Ser	Pro	Val
			260					265					270		
Ser	Asp	Val	Phe	Gly	Asn	Gly	Ala	Ala	Glu	Tyr	Asn	Asp			
		275					280					285			